Roy F. Weston, Inc.
Suite 400
3 Hawthorn Parkway
Vernon Hills, Illinois 60061-1450
847-918-4000 • Fax 847-918-4055

21 January 2000

Mr. Jon Peterson, SR-6J
Work Assignment Manager
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604

U.S. EPA Contract No. 68-W7-0026
Work Assignment No. 003-ROBF-05AN
Document Control No. RFW003-2C-AEKG

Subject: Final Summary Report
Albion-Sheridan Township Landfill (ASTL) Site
Calhoun County, Michigan

Dear Mr. Peterson:

Roy F. Weston, Inc. (WESTON®) is pleased to submit the field summary report for the remedial activities completed at the Albion-Sheridan Township Landfill (ASTL) Site. This letter report summarizes the activities that took place between 6 March 1998 and 2 November 1999. Copies of the field notes from the field logbook, daily reports, and photographs of the field activities were provided in the monthly reports submitted previously.

In general, all remedial activities were conducted in accordance with the plans and specifications set forth in the Construction Quality Assurance Plan and in the Final Design Plan for ASTL, Calhoun County, Michigan prepared by URS Greiner Woodward Clyde (URSGWC) in August 1997. Any deviation from the aforementioned plans and specifications are detailed in the following summary.

A number of remedial activities were conducted at the site between 6 March 1998 and 2 November 1999. These activities included removal of drums, removal of underground storage tanks (USTs), and construction of a landfill cap. A summary of each activity is provided below.

REMOVAL OF DRUMS

Removal of drums began on 6 March 1998 and consisted of excavation and removal of 55-gallon drums from the landfill. Approximately 166 drums were excavated during the drum removal activity. The drums were staged inside a lined pad (southeast of the excavation area) or immediately next to the pad area and sampled and analyzed for RCRA characteristics prior to disposal at an off-site landfill. On 03 March 1998, the drums were removed from the site (flammable material loaded first and oxidizers last). All 116 drums removed that day were delivered to ENSCO in El Dorado, Arkansas. On 09 March 1998, 50 more drums were removed from the landfill by IT/OHM. The drums were delivered to EQ in Detroit, Michigan or ENSCO based on the characteristics of the barrel contents.

REMOVAL OF USTs

UST removal activities began on 09 September 1998 with the removal of two underground storage tanks (USTs). During excavation activities, no petroleum odors or stained soils were observed. However, inspection of the dispensing pumps indicated that the two USTs used to contain gasoline. Richard Mcgee from the Department of Environmental Quality (MDEQ) was present to observe the removal of the USTs. The USTs were in good condition. Woodward Clyde collected analytical soil samples from the UST excavation and submitted the samples to Quanterra Laboratory of North Canton, Ohio. IT/OHM also dismantled the pump area associated with the former UST area. No closure documentation for the USTs has been provided by Woodward Clyde to WESTON.

CONSTRUCTION OF LANDFILL CAP

Construction of a landfill cap began during the week of 26 April 1999. Rough grading activities in preparation of the landfill cap installation were conducted along the west, north, and south edges of the landfill. All surveying during landfill construction was conducted by Midwest Environmental Consulting. A plastic hose was installed to convey water from the Kalamazoo River to the site. Consumer's Energy personnel cleared trees on the east and southwest sides of the landfill. A number of 55-gallon drums leftover from the 1998 drum removal activity were found at the site. Two of these drums did not have appropriate analytical results. Consequently, these drums were segregated and sampled and analyzed prior to off-site disposal. The remaining 42 drums were classified as non-hazardous and incorporated into the landfill.

Waste excavation and consolidation activities began on week of 03 May 1999. On 11 May 1999, the IT/OHM Health and Safety representative at the site informed WESTON that medical waste was observed in the waste excavation area. A survey of the waste excavation area and its immediate vicinities confirmed the presence of hypodermic needles. WESTON started monitoring the excavation area and the excavated waste for radiation hazards since radioactive waste is usually associated with medical waste. Readings from both GM Pancake and Sodium Iodide Detector were either at or below background levels. WESTON monitored the waste excavation area from 14 May 1999 through 04 June 1999.

During the week of 24 May 1999, excavation and consolidation of waste continued at the landfill. Approximately 1,000 cubic yards of green and blue stained soil was excavated from the east area of the site and stockpiled for further characterization. IT/OHM collected analytical samples of the stained soil. After a review of the analytical data, Woodward Clyde indicated that a portion of the stained soil will be removed from the site because the soil exceeded the treatment standard for reactive cyanide. The stained soil was separated into two piles. The larger stockpile (800 cubic yards) was incorporated into the low-lying areas of the landfill. The smaller stockpile (200 cubic yards) was removed from the site for off-site disposal at Michigan Disposal (Belleville, Michigan).

Clean excavation soil from the eastern storm water trench and the east borrow pit was used to grade various areas of the site. During the week of 07 June 1999, passive gas collection line No. 1 (southern-most line) was installed. Passive gas collection line No. 2 through No. 5 were also partially completed during this week. The installation of perimeter fencing (Allen Brothers of Albion, Michigan) was initiated in various areas at this time.

Placement of the gas collection/foundation layer was initiated during the week of 21 June 1999. Soil used for the gas collection layer was removed from the west borrow pit. During grading activities, two new waste areas beyond the current boundaries of the landfill were encountered. These areas were located on the east and south side of the landfill. Waste from the east side was removed and consolidated in the low-lying areas of the existing landfill. The new waste area along the south side of the landfill was incorporated into existing landfill.

NTH Consultants Ltd. (subcontractor of Woodward-Clyde) collected soil samples for geotechnical analysis and performed density and moisture content tests (gas collection layer) at the site. During the week of 05 July 1999, NTH was requested to retest the gas collection/foundation layer soil near the passive gas line No. 4 area. The soil did not meet the specifications (percentage of fines was

greater than 12%) required in the Woodward Clyde Final Design Report. The soil near passive gas line No. 4 was later excavated and replaced by soil that met the appropriate specifications.

On 06 July 1999, a seep near the northwest corner of the landfill was discovered during oversight activities. The seep liquid was pumped (started on 08 July 1999) to the center of the landfill and allowed to percolate through the landfill. Ms. Mary Schafer and Ms. Wendy Ramirez of the MDEQ sampled the seep liquid, associated sediment, and potential runoff areas on 22 July 1999. No analytical results were provided to WESTON by the MDEQ.

During the week of 12 July 1999, damage to the collection/foundation layer from past rain events, was repaired. GSE, Inc. also initiated placement of the geomembrane during this week. A rub sheet (a plastic sheet between liner and soil) for protecting the geomembrane from moisture and particulates was not utilized during fusion welding until 23 July 1999. Over 240 geomembrane areas were patched along the south side of the landfill.

The installation of the geomembrane and drainage net continued through the month of July and into August. On 06 August 1999, a small methane fire was created by a hand torch used for air testing. The fire destroyed a small portion of the geomembrane along the western edge of the cap area. The geomembrane was later replaced. Heavy rainfall events delayed the installation of the geomembrane and created erosional pathways along the edges of the landfill. An erosional pathway along the eastern edge of the landfill (east of liner area) revealed a small amount of waste material at this time. The waste (outside the eastern boundary) was collected and test pits were excavated within the immediate area to insure that additional waste was not present. The drums stored in the barrel storage area were emptied, crushed, and placed in two separate roll-off dumpsters during August 1999. The roll-off dumpsters were transported off-site by Inland Waters.

Installation of the geomembrane was completed the week of 23 August 1999. The seep area at the northwest corner of the landfill was covered at this time. The panels of the geomembrane along the north side of the landfill were not placed in the direction of maximum slope (as required in Woodward Clyde Final Design Report). Placement of the 18-inch cover layer over the drainage net continued. During this week, a pocket of air/methane under the geomembrane was observed on the east side of the landfill. Four additional pockets of air/methane under the geomembrane were discovered during the week of 30 August 1999. In early September the MDEQ, concerned that the air/methane pockets were destroying the integrity of the geomembrane, directed Woodward Clyde to analyze four additional geomembrane samples for the parameters outlined in the Final Design Report. After the geomembrane samples were obtained, all air/methane pocket locations were

pumped, patched, and covered by the drainage net/18-inch cover layer. Woodward Clyde indicated that the geomembrane samples obtained from the air/methane pockets met the required specifications. Construction of the 18-inch cover layer was completed in early September.

Northcoast Drilling Services, Inc. completed the installation of the Gas Monitoring Probes (GMP), during the week of 13 September 1999. Topsoil was transported from an off-site source and stockpiled on the west edge of the landfill. The topsoil was mixed on-site at a staging area to meet the specified organic levels in the Final Design Plan. Tests performed by Woodward Clyde later indicated that the topsoil lacked adequate organic content. The placement of the 6-inch topsoil layer and the construction of a drainage control berm (northwest corner of landfill) were completed by the end of September. Midwest Environmental Consulting was on-site during the last week of September to survey the final topography of the landfill cap.

Demobilization of equipment occurred during the first week of October. At this time, WESTON inspected the site and determined that the topsoil layer appeared in good condition, the perimeter fence was not complete, and seeding had not begun. During mid-October the seed contractor hydro-seeded and covered a portion of the south side of the landfill with erosion-preventative mesh. Since the contractor did not have an adequate supply of the mesh, large sloped areas of the landfill were not covered. The final inspection occurred on 2 November 1999. A walk of the site revealed that no erosion had occurred along the edges of the landfill and that the barbed wire (perimeter fence) was still incomplete. The berm along the northwest corner of the landfill may have to be re-worked due to slope steepness. All three gates around landfill were locked after the inspection.

Should you have any questions or require additional information, please feel free to contact me at (847) 918-4005.

Very truly yours.

ROY F. WESTON, INC.

Deepak L. Bhojwani, E.I.T.
Site Manager

DLB:ts

CH01\PUBLIC\WO\RAC\003\27837LTR.WPD RFW003-2C-AEKG